

immersion in fresh- and salt-water. *Ligia oceanica*, the quay-slug, is found at various heights above high-water mark, but not far inland, and has congeners which inhabit fresh-water or are amphibious or terrestrial. The gills of these forms are similar, and Miss Stewart carried out experiments to determine the effect upon the gill structure of prolonged immersion in sea-water and fresh-water.

PARIS.

Academy of Sciences, November 3.—M. F. Guyon in the chair.—A. **Haller**: The alkylation of the β - and γ -methylcyclohexanones by means of sodium amide. The reaction between sodium amide, methylcyclohexanone, and ethyl iodide gives a condensation product of the ketone in addition to the substituted ethyl derivatives. Details are given of the variation of this secondary reaction with the experimental conditions.—A. **Laveran** and G. **Franchini**: Experimental infections of mammals by the flagellæ of the digestive tube of *Ctenocephalus canis* and *Anopheles maculipennis*. Flagellæ from both sources are equally capable of infecting the mouse and rat.—Pierre **Termier**: The excursion Cr of the twelfth International Geological Congress. The Pre-Cambrian strata of the Lake region; the tectonic problems of the great chains of the west.—E. **Belot**: Zodiacal matter and the solar constant. A discussion of the perturbations due to zodiacal matter, the reflection of sunlight upon the same, and the variations of the solar constant due to absorption by zodiacal matter.—M. **Giacobini**: The comet 1913e. Position of the Zinner comet on November 1. The comet appeared as a round nebulosity of about 45" diameter, with a nucleus of about 9.5 magnitude. There were indications that the light from the comet was polarised.—M. **Conadé**: An aviation parachute. A description of experiments made with small-scale models.—P. **Helbronner**: The complementary geodesic triangulations of the higher regions of the French Alps.—Bohdan de **Szyszkowski**: The rôle of the neutral molecule in electrolytes.—B. **Szillard**: A direct reading static voltmeter for the measurement of very small currents.—Thadée **Peczalski**: Compressibility and the differences of the specific heats of liquids.—Georges **Baume**: Some physico-chemical applications of the Maxwell-Barthoud distribution equation.—Eugène L. **Dupuy** and A. **Portevin**: The influence of various metals on the thermo-electric properties of the iron-carbon alloys. Sixty alloys were studied, the elements added to the iron-carbon alloy including chromium, manganese, aluminium, tungsten, and molybdenum. The thermo-electric power was measured over the ranges -78° C. to 0° , and 0° – 100° .—Amé **Pictet** and Maurice **Bouvier**: The distillation of coal under reduced pressure. The coal was heated to about 450° C., and the pressure in the retort maintained at about 16 mm. The aqueous portion of the distillate was acid, and contained no ammonia. The tar contained neither phenols nor naphthalene, but the presence of secondary bases was proved. The hydrocarbons belonged nearly exclusively to the fatty series.—Aug. **Rilliet** and L. **Kreitmann**: 6-Aminopiperonal.—Pierre **Lesage**: Contribution to a critical examination of the action of atmospheric electricity upon plants.—J. **Beauverie**: Frequent presence of the germs of rust in the interior of the seeds of the Gramineæ.—R. **Robinson**: The physiology of the cæcal appendix. The hormone of the vermium.—Raoul **Bayeux**: A new distributing gas micrometer for use in intravenous injections.—Jules **Amar**: The respiratory signs of fatigue.—L. C. **Soula**: The mechanism of anaphylaxis.—Gabriel **Bertrand** and A. **Compton**: The presence of a new diastase, salicinase, in almonds.—C. **Gessard**: The salts in the coagulation of the blood.—Fred **Viès**:

The absorption of the visible rays by the blood of the octopus.—Louis **Gentil** and Pereirê de **Sousa**: The effects in Morocco of the great earthquake in Portugal of 1755.

NEW SOUTH WALES.

Linnean Society, September 24.—Mr. W. S. Dun, president, in the chair.—W. N. **Benson**: The geology and petrology of the great Serpentine belt of New South Wales. Part ii., the geology of the Nundle district. The formations present are, the Woolomin Series, the Bowling Alley Series (equivalent to the Tamworth Series), of which five divisions are recognised; and the Nundle Series, equivalent to the Barraba Mudstones. The last lies conformably on the Bowling Alley Series, for the Baldwin Agglomerates are not developed. The first two contain numerous interstratified flows of spilite, and, in the second, sills of albitised dolerite are abundant. All three contain radiolaria. A well-marked Middle Devonian limestone horizon runs throughout the Bowling Alley Series.—E. C. **Andrews**: The development of the natural order Myrtaceæ. The Myrtaceæ are widely distributed over the tropical and subtropical regions of the world, particularly in the fertile tropics. The number of species is approximately 3100 (America, 1670; Australia, about 800; Asia, about 235; Africa, 85; Malay Archipelago and Pacific Islands, 310 species; Europe only one). By far the greater number of these are of luxuriant types, possessing fleshy and indehiscent fruits. The capsular genera are endemic in Australasia and the neighbouring regions, and the majority of the species grow on poor sandy soil, and are strikingly depauperate in nature, compared with the widely spread genera, such as the Myrtles, Guavas, and Eugénias. Whereas Ettingshausen considers the modern endemic flora of Australia as being of cosmopolitan range in early and later Tertiary time, the present author considers the present endemic flora of Australia as being the depauperate descendants of luxuriant and cosmopolitan types of the Cretaceous and Eocene periods.—R. T. **Baker**: Descriptions of three new species of the natural order Myrtaceæ. Two species of *Melaleuca* from littoral Eastern Australia, and one of *Angophora* from the New England district, are described as new.

BOOKS RECEIVED.

Index of Spectra. By Dr. W. M. Watts. Appendix v. Pp. iv+92. (London: W. Wesley and Son.)

Die radioaktive Strahlung als Gegenstand wahrscheinlichkeitstheoretischer Untersuchungen. By Prof. L. v. Bortkiewicz. Pp. 84. (Berlin: J. Springer.) 4 marks.

The Life of the Fly, with which are Interspersed some Chapters of Autobiography. By J. H. Fabre. Translated by A. T. de Mattos. Pp. xi+508. (London: Hodder and Stoughton.) 6s. net.

The Diesel or Slow Combustion Oil Engine. By Prof. G. J. Wells and A. J. Wallis-Tavler. Pp. xvi+286. (London: Crosby Lockwood and Son.) 7s. 6d. net.

Key to "A New Algebra." Vol. ii., containing parts iv., v., and vi. By S. Barnard and J. M. Child. Pp. 447-915. (London: Macmillan and Co., Ltd.) 8s. 6d.

Ministry of Finance, Egypt. Survey Department. The Rains of the Nile Basin and the Nile Flood of 1911. By J. I. Craig. Pp. 110+viii plates. (Cairo: Government Press.) P.T.10.

The Johns Hopkins University Circular, 1913, No. 8. Catalogue and Announcement for 1913-14 of the Medical Department Established in Connection with the Johns Hopkins Hospital. Pp. 276. (Baltimore, Md.)

Our Common Sea-Birds: Cormorants, Terns, Gulls, Skuas, Petrels, and Auks. By P. R. Lowe. Pp. xvi+310. (London: *Country Life*, Ltd.) 15s. net.

The Archaeology of the Anglo-Saxon Settlements. By E. T. Leeds. Pp. 144. (Oxford: Clarendon Press.) 5s. net.

University College of North Wales. Calendar for the Session 1913-14. Pp. 446. (Manchester: J. E. Cornish, Ltd.)

Le Scienze Esatte Nell' Antica Grecia. By Prof. G. Loria. Seconda edizione. Pp. xxiv+970. (Milano: U. Hoepli.) 9.50 lire.

Opere Matematiche di Luigi Cremona. Tomo Primo. Pp. viii+497. (Milano: U. Hoepli.) 25 lire.

Cement, Concrete, and Bricks. By A. B. Searle. Pp. xi+412. (London: Constable and Co., Ltd.) 10s. 6d. net.

Dysenteries: their Differentiation and Treatment. By Prof. L. Rogers. Pp. xi+336+x plates. (London: H. Frowde and Hodder and Stoughton.) 10s. 6d. net.

Milton's Astronomy: The Astronomy of "Paradise Lost." By Dr. T. N. Orchard. Pp. xi+288+plates. (London: Longmans and Co.) 7s. 6d. net.

Scott's Last Expedition. In two vols., vol. i. being the Journals of Capt. R. F. Scott, R.N., C.V.O. Pp. xxvi+633+plates; vol. ii. being the Reports of the Journeys and the Scientific Work undertaken by Dr. E. A. Wilson and the Surviving Members of the Expedition. Arranged by L. Huxley. With a Preface by Sir Clements R. Markham, K.C.B. Pp. xiv+534+plates. (London: Smith, Elder and Co.) 42s. net the two vols.

Notions fondamentales de Chimie Organique. By Prof. C. Moureu. Quatrième édition. Pp. 383. (Paris: Gauthier-Villars.) 9 francs.

The Library Association Book Production Committee. Interim Report. Pp. 32. (London: Library Association.) 1s. net.

Report of the Bombay Bacteriological Laboratory for the Year 1912. By Major W. G. Liston. Pp. 39. (Bombay: Government Central Press.) 5 annas, or 6d.

Ueber Neo-Vitalismus. By E. du Bois-Reymond. Edited by E. Metze. Pp. 60. (Brackwede i.W.: Dr. W. Breitenbach.) 1 mark.

Transactions of the Royal Society of Edinburgh. Vol. xlix., part 2 (No. 3). A Monograph on the General Morphology of the Myxinoïd Fishes, based on a Study of Myxine. Part v., The Anatomy of the Gut and its Appendages. By Prof. F. J. Cole. Pp. 293-344+plates. (Edinburgh: R. Grant and Son; London: Williams and Norgate.) 6s. 3d.

The Elements of Descriptive Astronomy. By E. O. Tancok. Pp. 110+xv plates. (Oxford: Clarendon Press.) 2s. 6d. net.

Papers of the British School at Rome. Vol. vi. Pp. xiv+511+x1 plates. (London: Macmillan and Co., Ltd.) 42s. net.

Clinical Bacteriology and Vaccine Therapy for Veterinary Surgeons. By W. Scott. Pp. xiv+222+xii plates. (London: Ballière, Tindall and Cox.) 7s. 6d. net.

Chemische Technologie der Gespinnstfasern. By Dr. K. Stirm. Pp. xvi+410. (Berlin: Gebrüder Borntraeger.) 12 marks.

A Text-book of Elementary Statics. By Prof. R. S. Heath. Pp. xii+284. (Oxford: Clarendon Press.)

All Men are Ghosts. By L. P. Jacks. Pp. ix+360. (London: Williams and Norgate.) 5s. net.

Institut de Paléontologie Humaine. La Pasiega. A. Puente-Viesgo (Santander), Espagne. By Prof. H. Breuil, Prof. H. Obermaier, and H. Alcalde del Rio. Pp. 64+xxix plates. (Monaco: A. Chêne.)

Hope and Help. Golden Advice on the Overcoming of the Drink Habit. By One Who Cured Himself. Pp. 44. (London: A. M. King and Co.) 1s.

The Cambridge Manuals of Science and Literature. The Fertility of the Soil. By Dr. E. J. Russell. Pp. iv+128+plates. The Life-Story of Insects. By Prof. G. H. Carpenter. Pp. iv+134. The Peoples of India. By J. D. Anderson. Pp. xii+118+vii plates. Pearls. By Prof. W. J. Dakin. Pp. viii+144. Natural Sources of Energy. By Prof. A. H. Gibson. Pp. viii+131. The Flea. By H. Russell. Pp. xi+125. (Cambridge University Press.) Each 1s. net.

The Ideals and Organisation of a Medical Society. By Dr. J. B. Hurry. Pp. 51. (London: J. and A. Churchill.) 2s. net.

Carbon Dioxide Snow: its Therapeutic Uses (Methods of Collection and Application). By J. Hall-Edwards. Pp. xv+78+plates. (London: Simpkin and Co., Ltd.) 3s. 6d.

Introduction to Biology. By Prof. M. A. Bigelow and A. N. Bigelow. Pp. xi+424. (London: Macmillan and Co., Ltd.) 6s.

Letters and Recollections of Alexander Agassiz, with a Sketch of his Life and Work. Edited by G. R. Agassiz. Pp. xi+454+plates. (London: Constable and Co., Ltd.) 14s. net.

Philips' Nature Calendar, 1914. (London: G. Philip and Son, Ltd.) 6d. net.

Cassell's Natural History. By F. M. Duncan. Pp. xx+432+plates. (London: Cassell and Co., Ltd.) 9s. net.

The British Empire Universities Modern English Illustrated Dictionary. Edited by E. D. Price and Dr. H. T. Peck. Pp. lxxx+1008+plates. (London: The Syndicate Publishing Co.) 20s.

Farm and Creamery Buttermaking and Students' Reference Book. By C. W. Walker-Tisdale and T. R. Robinson. Third revision. Pp. 194. (London: *Dairy World and British Dairy Farmer*.) 3s. 6d. net.

Fishery Board for Scotland. Fifth Report (Northern Area) on Fishery and Hydrographical Investigations in the North Sea and Adjacent Waters. Conducted for the Fishery Board for Scotland in Co-operation with the International Council for the Exploration of the Sea, under the Superintendence of D'Arcy W. Thompson, 1908-11. Pp. vi+404+plates. (London: H.M.S.O.; Wyman and Sons, Ltd.) 14s.

A History and Description of the Royal Observatory, Cape of Good Hope. By Sir D. Gill. Pp. cxc+136+plates. (London: H.M.S.O.)

Studien zur Pathologie der Entwicklung. By Dr. R. Meyer. Edited by Dr. E. Schwalbe. Erster Band, Erstes Heft. Pp. iii+196+iii plates. (Jena: G. Fischer.) 8 marks.

Dansk Botanisk Arkiv. Bind i., No. 1. By E. Ostrup. Pp. 40+plate. Bind i., No. 2. By M. Vahl. Pp. 18. Bind i., No. 3. By O. Galloe. Pp. 119. Bind i., No. 4. By F. Borgesen. Pp. 160. (Kobenhavn: H. Hagerups Boghandel.) Prices various.

Beiträge zur Kenntnis der Kapverdischen Inseln. Die Ergebnisse einer Studienreise im Sommer 1912. By I. Friedlaender. Gesteine der Kapverdischen Inseln. By Prof. W. Bergt. Pp. xii+109+xix plates. (Berlin: D. Reimer.) 15 marks.

Matter and Some of its Dimensions. By W. K. Carr. Pp. 120. (London: Harper and Bros.) 2s. 6d. net.

Mountains: their Origin, Growth and Decay. By Prof. J. Geikie. Pp. xix+311+plates. (Edinburgh: Oliver and Boyd; London: Gurney and Jackson.) 12s. 6d. net.

A Dictionary of Applied Chemistry. By Sir E. Thorpe, assisted by Eminent Contributors. Revised and enlarged edition. Vol. v. Pp. viii+830. (London: Longmans and Co.) 45s. net.

A Treatise on Chemistry. By H. E. Roscoe and C. Schorlemmer. Vol. ii., The Metals. New edition, completely revised by the Right Hon. Sir H. Roscoe and others. Pp. xvi+1470. (London: Macmillan and Co., Ltd.) 30s. net.

Gardens of the Great Mughals. By C. M. V. Stuart. Pp. xviii+290+xl plates. (London: A. and C. Black.) 12s. 6d. net.

The Gannet: a Bird with a History. By J. H. Gurney. Pp. li+567+plates. (London: Witherby and Co.) 27s. 6d. net.

Canada: Department of Mines. Mines Branch. A General Summary of the Mineral Production of Canada during the Calendar Year 1912. Pp. 46. (Ottawa: Government Printing Bureau.)

New Zealand. Department of Lands and Survey. Report on the Survey Operations for the Year 1912-13. By J. Mackenzie. Pp. 77+maps. (Wellington: J. Mackay.)

DIARY OF SOCIETIES.

THURSDAY, NOVEMBER 13.

ROYAL SOCIETY, at 4.30.—The Preparation of Eye-preserving Glass for Spectacles: Sir William Crookes, O.M.—An Inversion Point for Liquid Carbon Dioxide in regard to the Joule-Thomson Effect: Prof. A. W. Porter.—Negative After-Images and successive Contrast with Pure Spectral Colours: Prof. A. W. Porter and Dr. F. W. Edridge-Green.—The Positive Ions from Hot Metals: Prof. O. W. Richardson.—(1) The Diurnal Variation of Terrestrial Magnetism.—(2) A Suggestion as to the Origin of Black Body Radiation: G. W. Walker.

CONCRETE INSTITUTE, at 7.30.—Presidential Address: E. P. Wells.

INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—Pressure Rises: W. Duddell.

FRIDAY, NOVEMBER 14

ROYAL ASTRONOMICAL SOCIETY, at 5.—Note on a Method of Balancing Dome Shutters: W. H. Maw.—Mean Areas and Heliographic Latitudes of Sun-spots in the Year 1912: Royal Observatory, Greenwich.—Reply to Mr. Denning's "Observations of the Orionids": C. P. Olivier.—The Expression of Sun-spot Frequency as a Fourier Sequence, and on the General Use of a Fourier Sequence in Similar Problems: H. H. Turner.—Further Note on the Possibility of Refraction by the Solar Atmosphere: R. S. Capon.—Sixth Note on the Number of Faint Stars with Large Proper Motions: F. A. Bellamy.—Seventh Note on the Number of Faint Stars with Large Proper Motions: R. J. Pocock.—The Dynamics of a Globular Stellar System: A. S. Eddington.—*Probable Papers*: Retrograde Satellite Orbits: J. Jackson.—(1) Photographic Magnitudes of 265 Stars within 25° of the North Pole; (2) The Application of Parallel Wire Diffraction Gratings to Photographic Photometry: S. Chapman and P. J. Melotte.

PHYSICAL SOCIETY, at 8.—On the Thermal Conductivity of Mercury by the Impressed Velocity Method: H. R. Nettleton.—On Polarisation and Energy Losses in Dielectrics: Dr. A. W. Ashton.—A Lecture Experiment to illustrate Ionisation by Collision and to show Thermoluminescence: F. J. Harlow.

ALCHEMICAL SOCIETY, at 8.15 (at The International Club, Regent Street, S.W.)—The Hermetic Mystery: Mme. Isabelle de Steiger.

MONDAY, NOVEMBER 17.

JUNIOR INSTITUTION OF ENGINEERS, at 7.—Annual General Meeting.—The Institution: E. King.

TUESDAY, NOVEMBER 18.

ROYAL ANTHROPOLOGICAL INSTITUTE, at 8.15.—The Evidential Value of the Historical Traditions of the Baganda and Bushongo: E. S. Hartland.

ROYAL STATISTICAL SOCIETY, at 5.—The Course of "Real Wages" in London, 1900-1912: Frances Wood.

ILLUMINATING ENGINEERING SOCIETY, at 8.—Report on Progress during the Vacation: L. Gaster.—Proceedings at the National Gas Exhibition: F. W. Godenough.—The Fourth International Congress on School Hygiene: Dr. J. Kerr.

INSTITUTION OF CIVIL ENGINEERS, at 8.—*Further Discussion*: The Construction of the "White Star" Dock and adjoining Quays at Southampton: F. E. Wentworth-Sheilds.

WEDNESDAY, NOVEMBER 19.

ROYAL METEOROLOGICAL SOCIETY, at 7.30.—Daily Temperature Range at Great Heights: W. H. Dines.—Eddy Wind of Gibraltar: H. Harries.

GEOLOGICAL SOCIETY, at 8.—Exhibition of Implements and Reputed Implements of Palaeolithic or Earlier Age, and of Flints showing Various Types of natural Fracture, followed by a Discussion.

AERONAUTICAL SOCIETY, at 8.30.—The Right to Fly: Roger Wallace, K.C.

ROYAL SOCIETY OF ARTS, at 8.—Opening Meeting. Address by Col. Sir T. H. Holdich, K.C.M.G.

ENTOMOLOGICAL SOCIETY, at 8.

ROYAL MICROSCOPICAL SOCIETY, at 8.—Notes on the Shell Structure in the Genus *Lingula*, Recent and Fossil: F. W. Chapman.—Development of an Embiid: J. C. Kershaw.

THURSDAY, NOVEMBER 20.

ROYAL SOCIETY, at 4.30.—*Probable Papers*: *Medullosa Pusilla*: Dr. D. H. Scott.—Neuro-muscular Structures in the Heart: Prof. A. F. S. Kent.—The Alleged Excretion of Creatine in Carbohydrate Starvation: G. Graham and E. P. Poulton.—The Origin and Destiny of Cholesterol in the Animal Organism. XI. The Cholesterol Content of Growing Chickens under Different Diets: J. A. Gardner and P. E. Lander.—Contributions to the Biochemistry of Growth—The Lipoids of Transplantable Tumours of the Mouse and the Rat: W. E. Bullock and W. Cramer.

FRIDAY, NOVEMBER 21.

INSTITUTION OF MECHANICAL ENGINEERS, at 8.—Cutting Power of Lathe Turning Tools: Prof. W. Ripper and G. W. Burley.

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